

FIG. 1

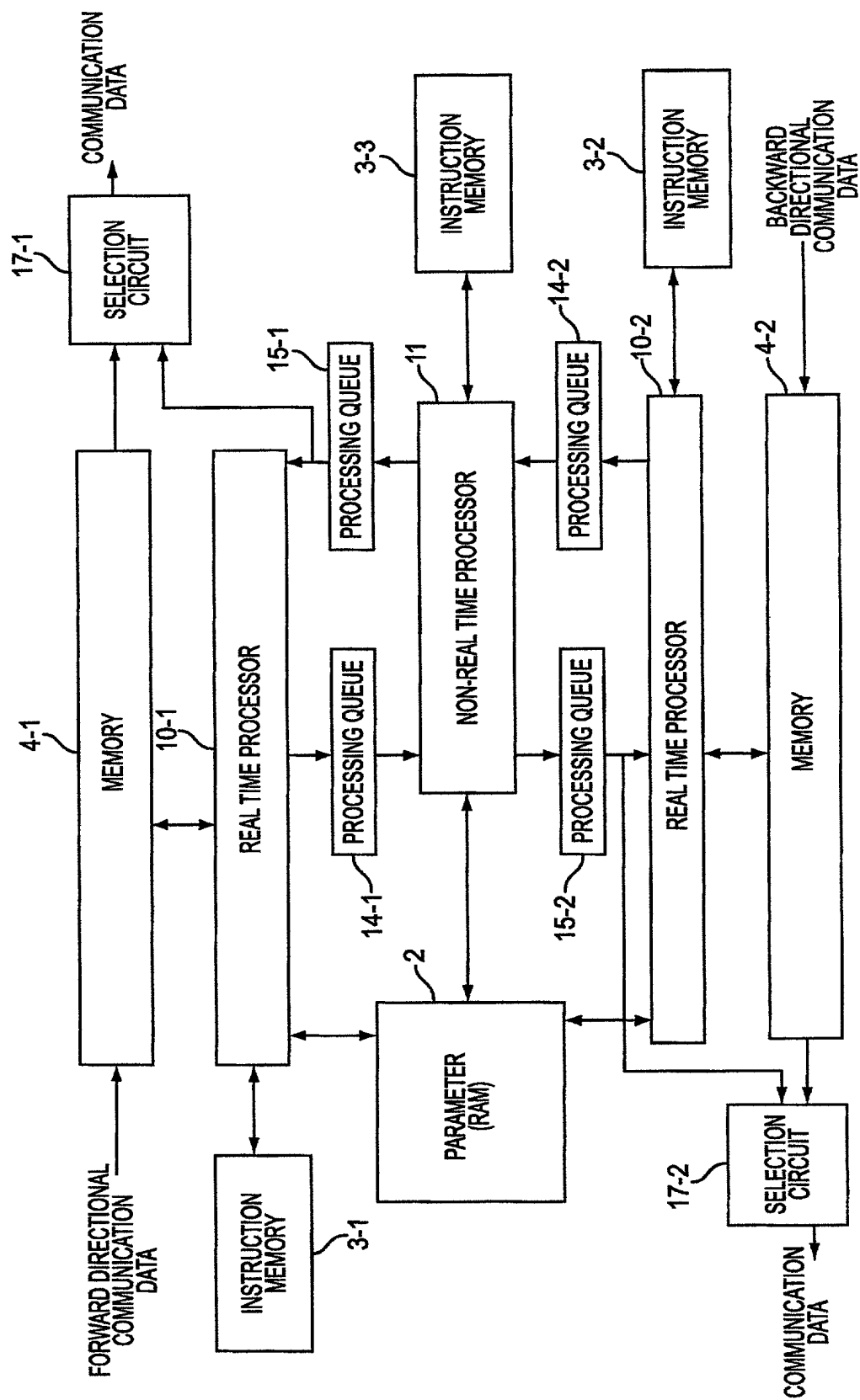


FIG. 2

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sequenceDiagram
    participant RT as 10-1 REAL TIME PROCESSOR
    participant Q as 14-1 PROCESSING QUEUE
    participant NRT as 11 NON-REAL TIME PROCESSOR

    RT->>Q: COMMUNICATION DATA 1
    Note over RT: P1
    RT->>Q: COMMUNICATION DATA 2
    Note over RT: P2
    RT->>Q: COMMUNICATION DATA 3
    Note over RT: P3
    Note over Q: PARAMETER, COMMUNICATION DATA, ETC.
    Note over Q: P6
    RT->>Q: COMMUNICATION DATA 4
    Note over RT: P4
    RT->>Q: COMMUNICATION DATA 5
    Note over RT: P5
    NRT->>Q: POLLING
    Note over Q: DEMAND DATA ABSENT
    NRT->>Q: POLLING
    Note over Q: DEMAND DATA ABSENT
    NRT->>Q: POLLING
    Note over Q: DEMAND DATA PRESENT
    Note over Q: P8
    NRT->>Q: QUEUE READ
    Note over Q: PARAMETER, COMMUNICATION DATA, ETC.
    Note over NRT: PROCESSING START P9
    NRT->>Q: POLLING
    Note over Q: DEMAND DATA ABSENT
    Note over NRT: PROCESSING END
    Note over NRT: P10
  
```

The diagram illustrates the data flow and control signals between three components: a Real Time Processor (10-1), a Processing Queue (14-1), and a Non-Real Time Processor (11). Communication data (1-5) flows from the Real Time Processor to the Queue. The Non-Real Time Processor polls the Queue, and upon receiving data, it begins processing. The Queue also contains parameter and communication data, which is accessed by the Non-Real Time Processor during its processing phase.

FIG. 3

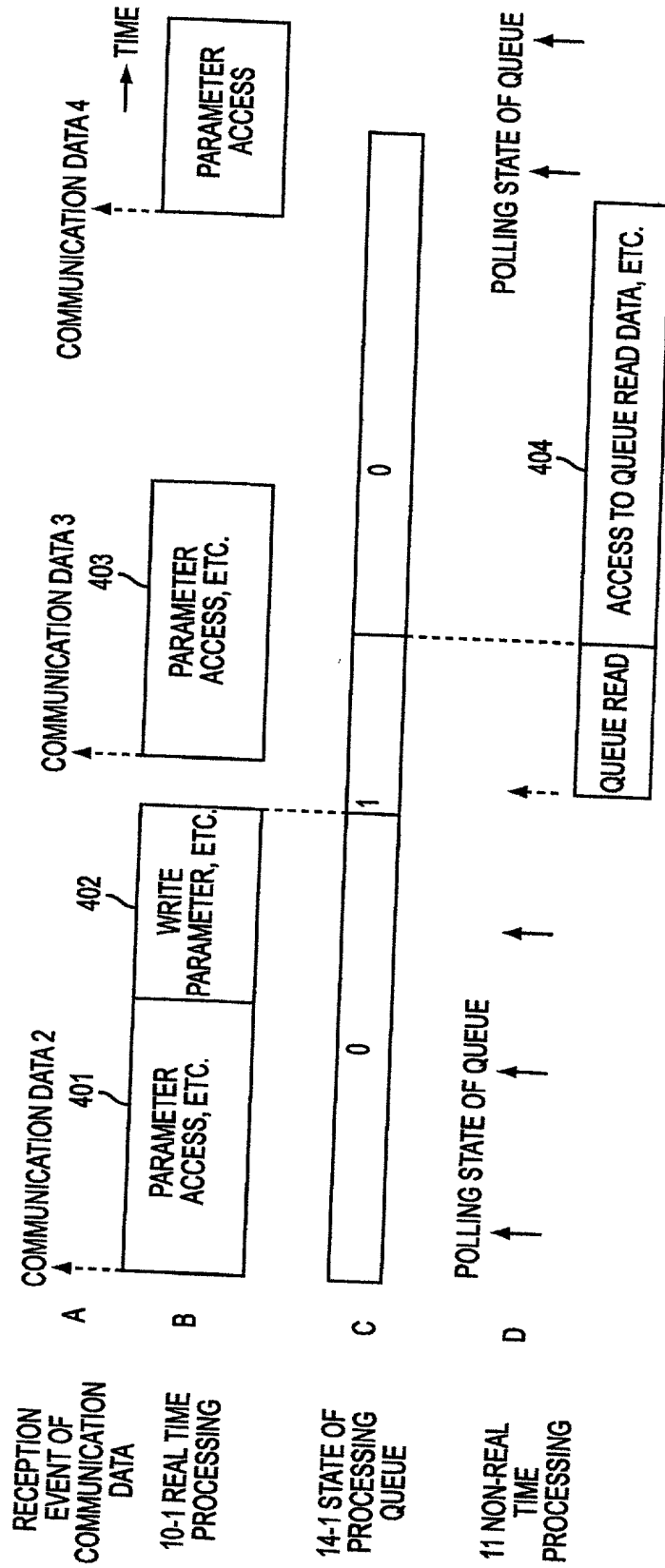


FIG. 4

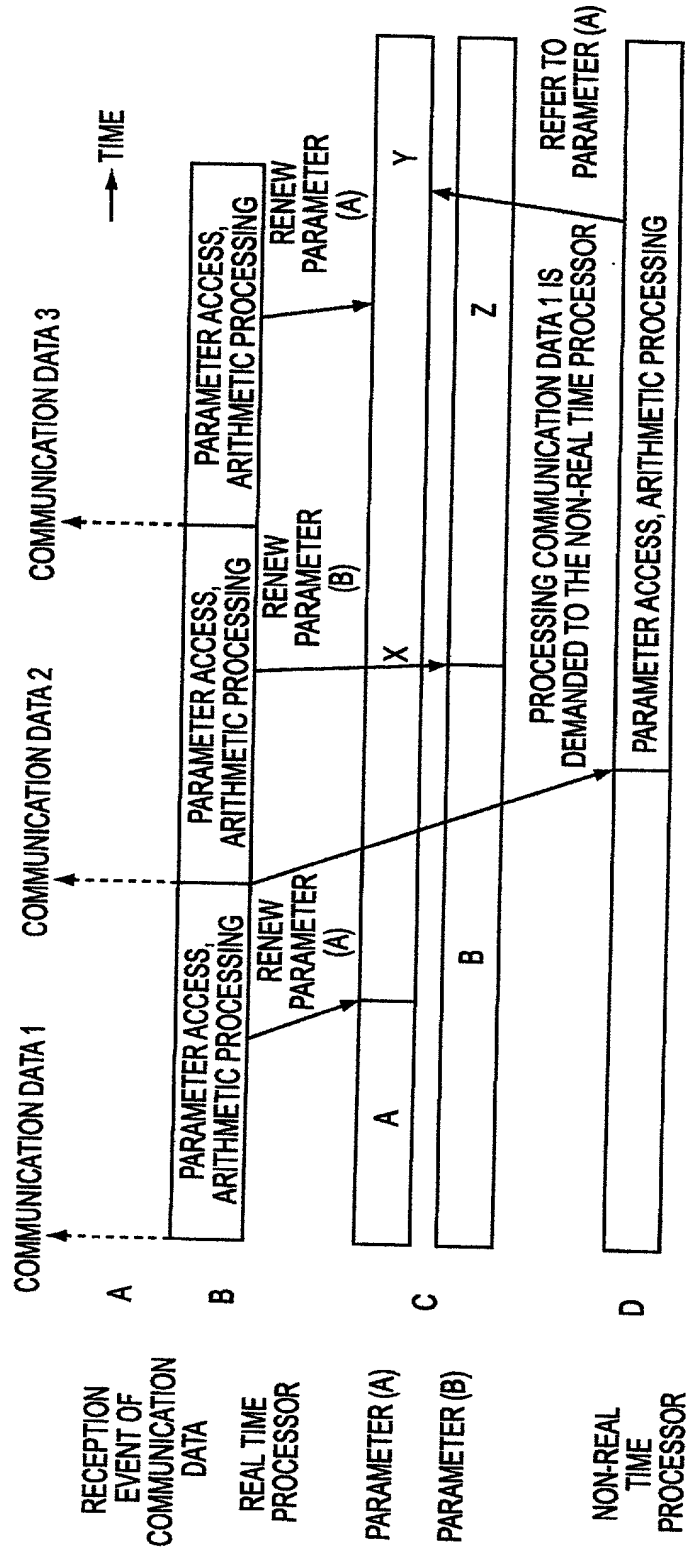


FIG. 5

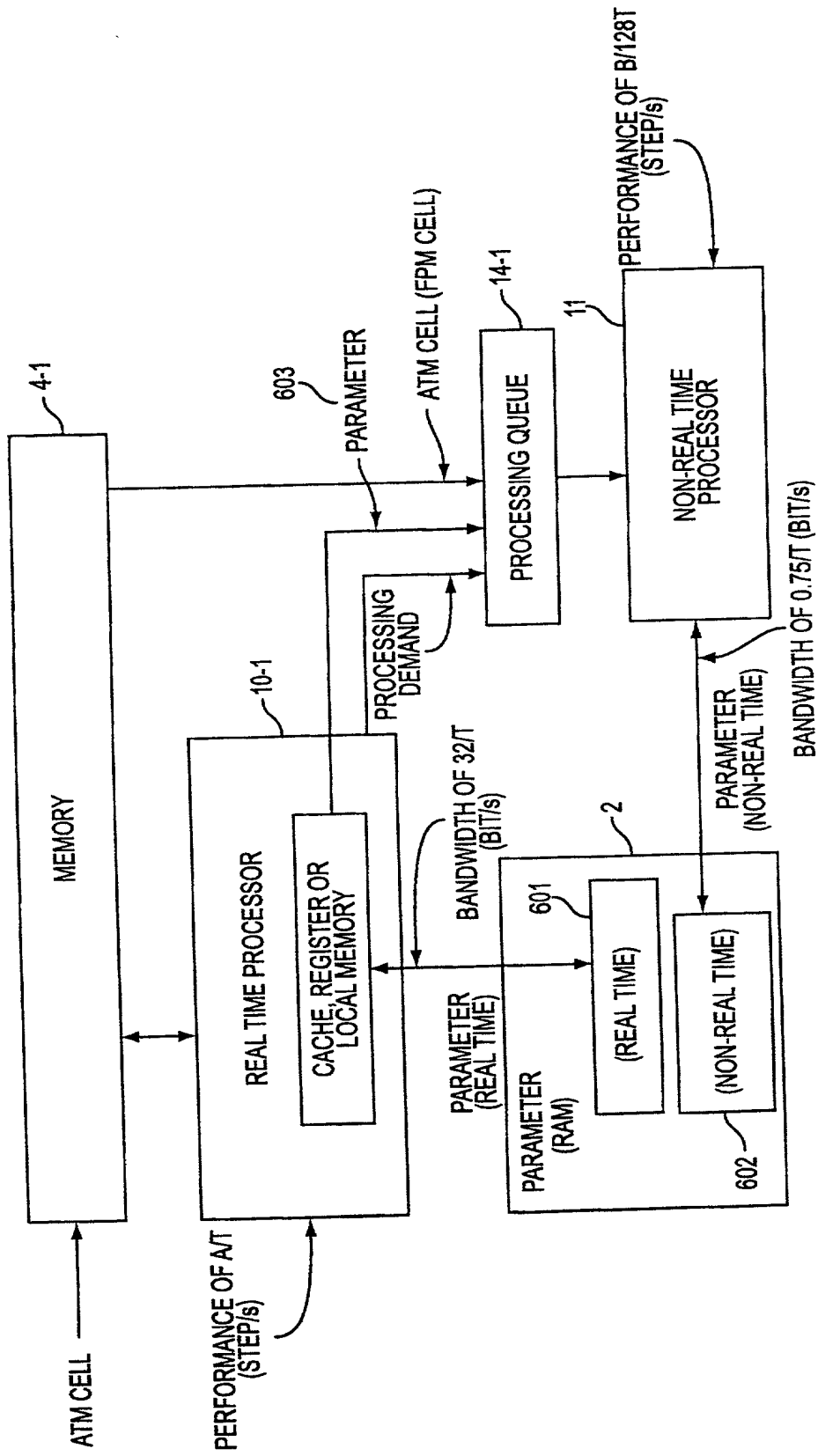
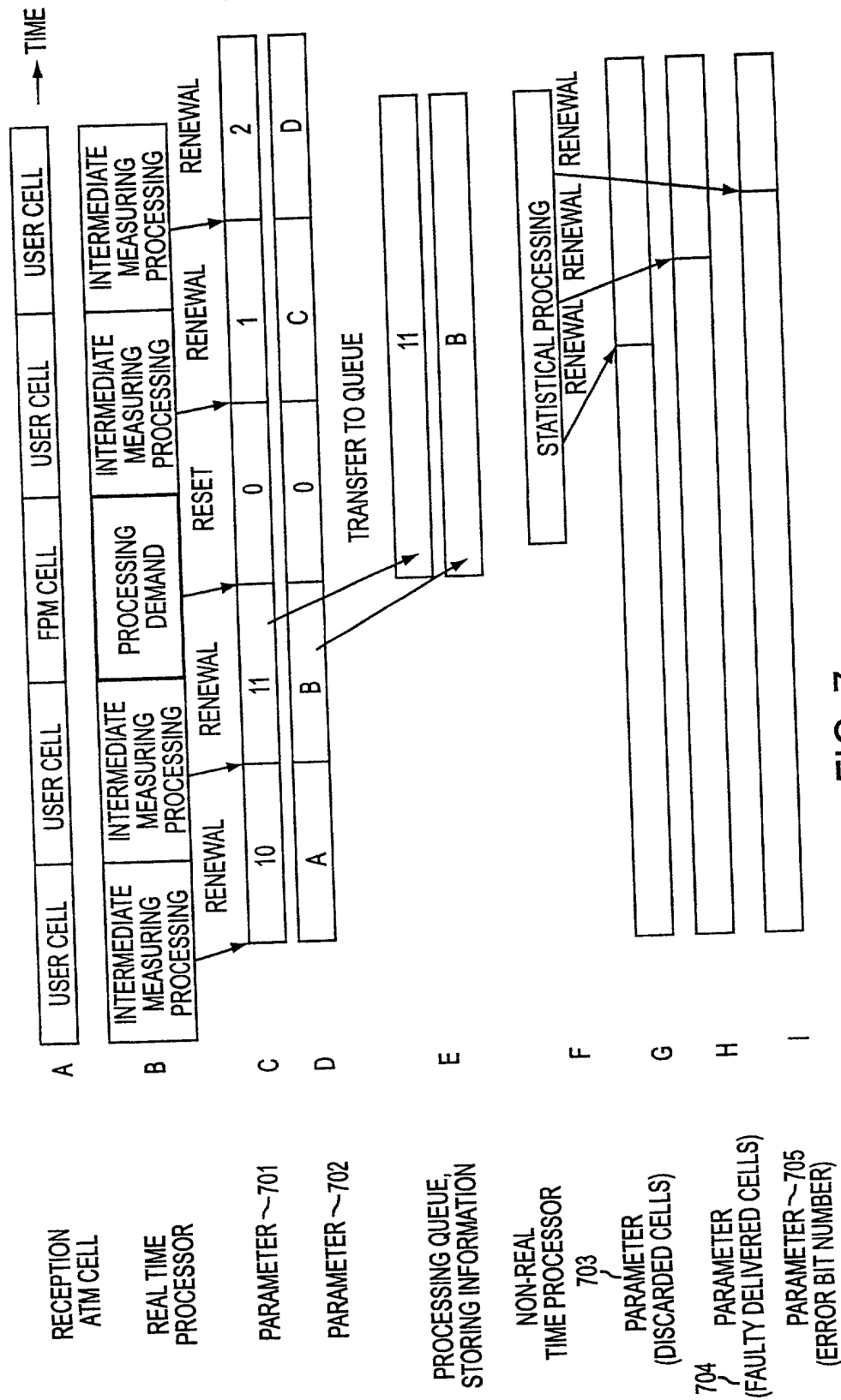


FIG. 6



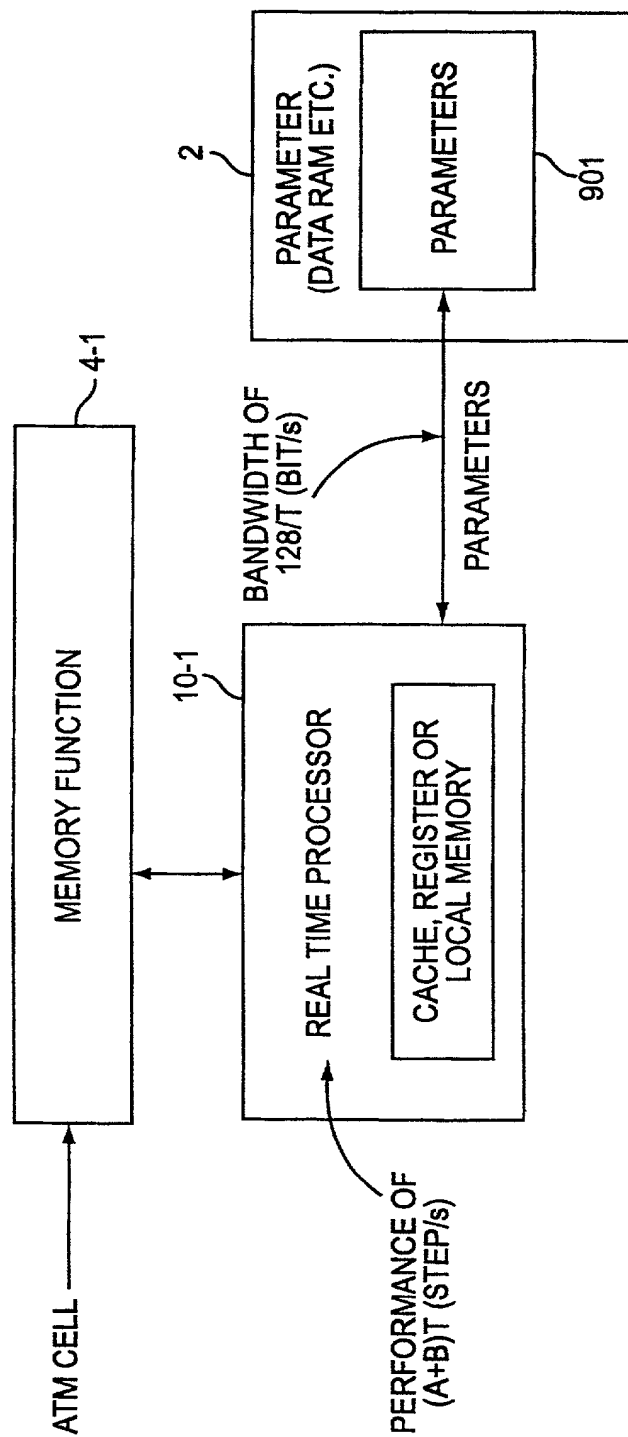


FIG. 9

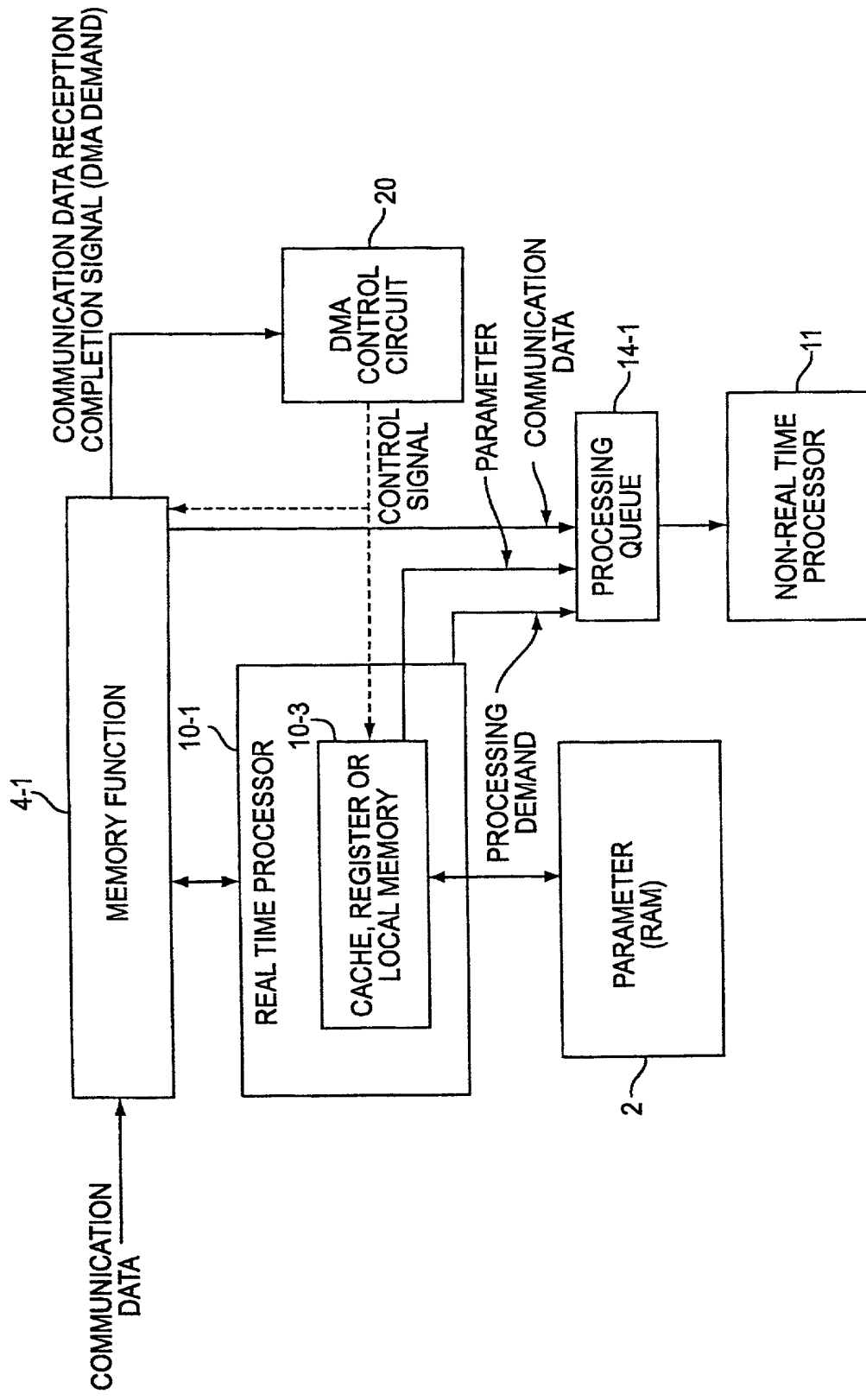


FIG. 10

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sequenceDiagram
    participant RT as 10-1 REAL TIME PROCESSOR
    participant PQ as 14-1 PROCESSING QUEUE
    participant NRT as 11 NON-REAL TIME PROCESSOR

    Note over RT: COMMUNICATION DATA 1
    RT->>PQ: DMAACTIVATION I  
COMMUNICATION DATA
    Note over PQ: COMMUNICATION DATA
    RT->>PQ: PARAMETER ACCESS  
PARAMETER
    Note over PQ: PARAMETER
    RT->>PQ: ARITHMETIC PROCESSING S110  
PROCESSING DEMAND ABSENT
    NRT->>PQ: POLLING
    Note over RT: COMMUNICATION DATA 2
    RT->>PQ: DMAACTIVATION II  
COMMUNICATION DATA
    Note over PQ: COMMUNICATION DATA
    RT->>PQ: PARAMETER ACCESS  
PARAMETER
    Note over PQ: PARAMETER
    RT->>PQ: ARITHMETIC PROCESSING  
PROCESSING DEMAND GENERATION III  
PROCESSING DEMAND
    Note over PQ: PROCESSING DEMAND
    RT->>PQ: INCREASE WRITE POINTER  
POLLING
    NRT->>PQ: QUEUE READ
    Note over PQ: S111  
PROCESSING DEMAND PRESENT
    RT->>NRT: INCREASE WRITE POINTER  
IV PROCESSING START
  
```

The diagram illustrates the interaction between three components: 10-1 REAL TIME PROCESSOR, 14-1 PROCESSING QUEUE, and 11 NON-REAL TIME PROCESSOR.

Initial State (Processing Queue):

- WRITE POINTER=0
- READ POINTER=0

Sequence of Events:

- COMMUNICATION DATA 1** is received by the 10-1 REAL TIME PROCESSOR.
- The 10-1 REAL TIME PROCESSOR sends **DMAACTIVATION I** and **COMMUNICATION DATA** to the 14-1 PROCESSING QUEUE.
- The 10-1 REAL TIME PROCESSOR sends **PARAMETER ACCESS** and **PARAMETER** to the 14-1 PROCESSING QUEUE.
- The 10-1 REAL TIME PROCESSOR sends **ARITHMETIC PROCESSING S110** and **PROCESSING DEMAND ABSENT** to the 14-1 PROCESSING QUEUE.
- The 11 NON-REAL TIME PROCESSOR sends **POLLING** to the 14-1 PROCESSING QUEUE.
- COMMUNICATION DATA 2** is received by the 10-1 REAL TIME PROCESSOR.
- The 10-1 REAL TIME PROCESSOR sends **DMAACTIVATION II** and **COMMUNICATION DATA** to the 14-1 PROCESSING QUEUE.
- The 10-1 REAL TIME PROCESSOR sends **PARAMETER ACCESS** and **PARAMETER** to the 14-1 PROCESSING QUEUE.
- The 10-1 REAL TIME PROCESSOR sends **ARITHMETIC PROCESSING** and **PROCESSING DEMAND GENERATION III** to the 14-1 PROCESSING QUEUE.
- The 10-1 REAL TIME PROCESSOR sends **PROCESSING DEMAND** to the 14-1 PROCESSING QUEUE.
- The 10-1 REAL TIME PROCESSOR sends **INCREASE WRITE POINTER** and **POLLING** to the 14-1 PROCESSING QUEUE.
- The 11 NON-REAL TIME PROCESSOR sends **QUEUE READ** to the 14-1 PROCESSING QUEUE.
- The 14-1 PROCESSING QUEUE sends **S111** and **PROCESSING DEMAND PRESENT** to the 10-1 REAL TIME PROCESSOR.
- The 10-1 REAL TIME PROCESSOR sends **INCREASE WRITE POINTER** to the 11 NON-REAL TIME PROCESSOR, labeled **IV PROCESSING START**.

FIG. 11

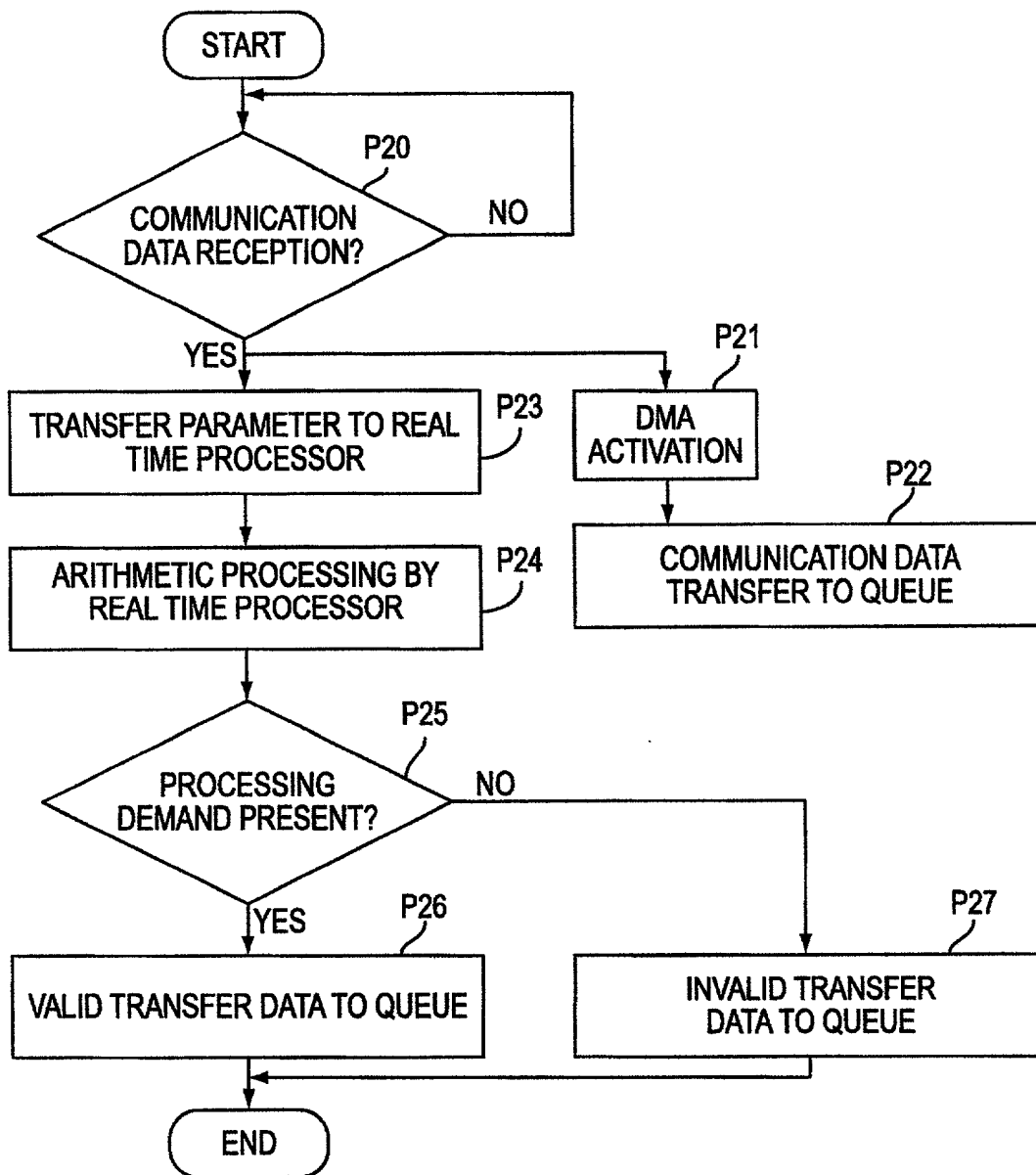


FIG. 12

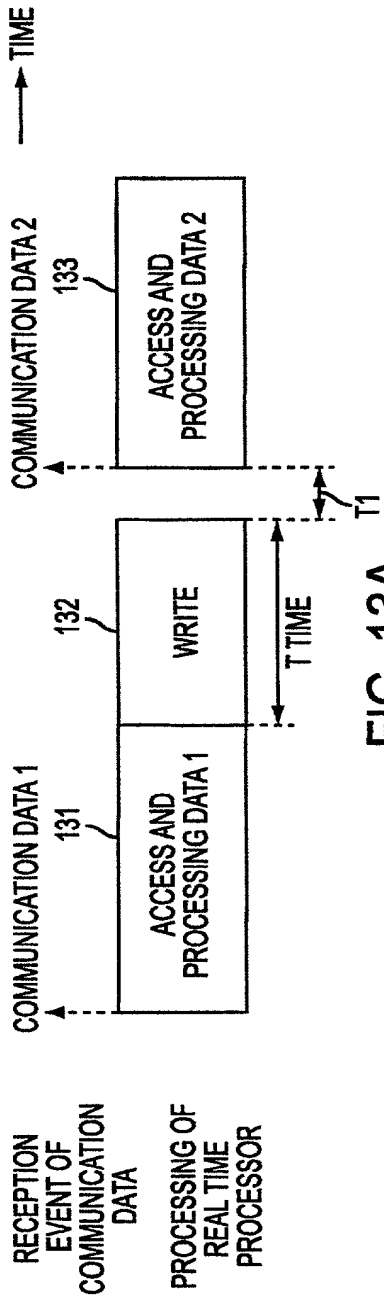


FIG. 13A

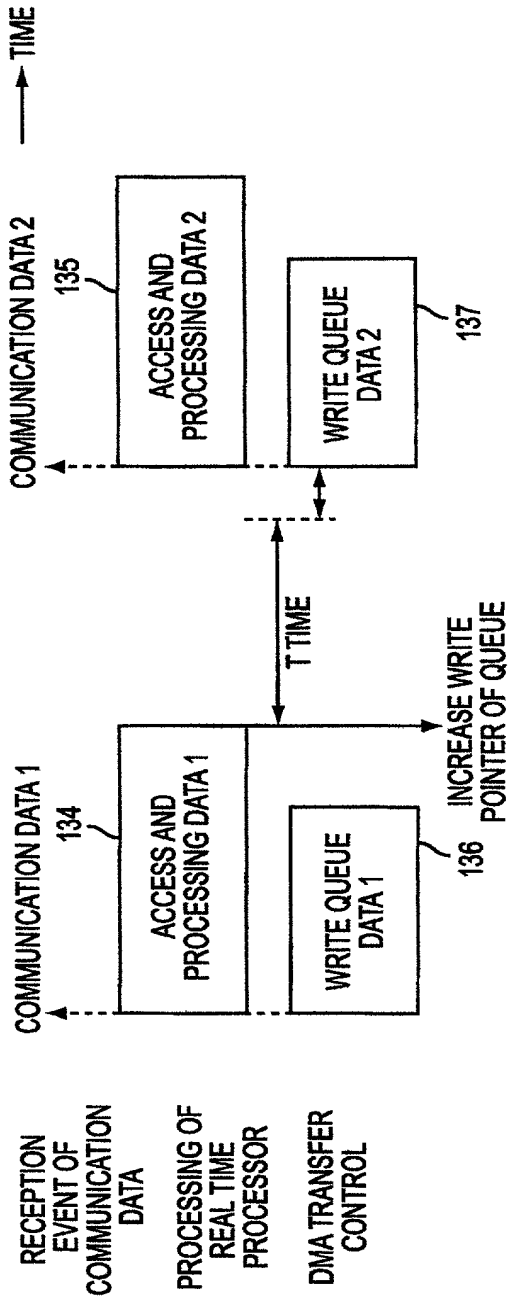


FIG. 13B

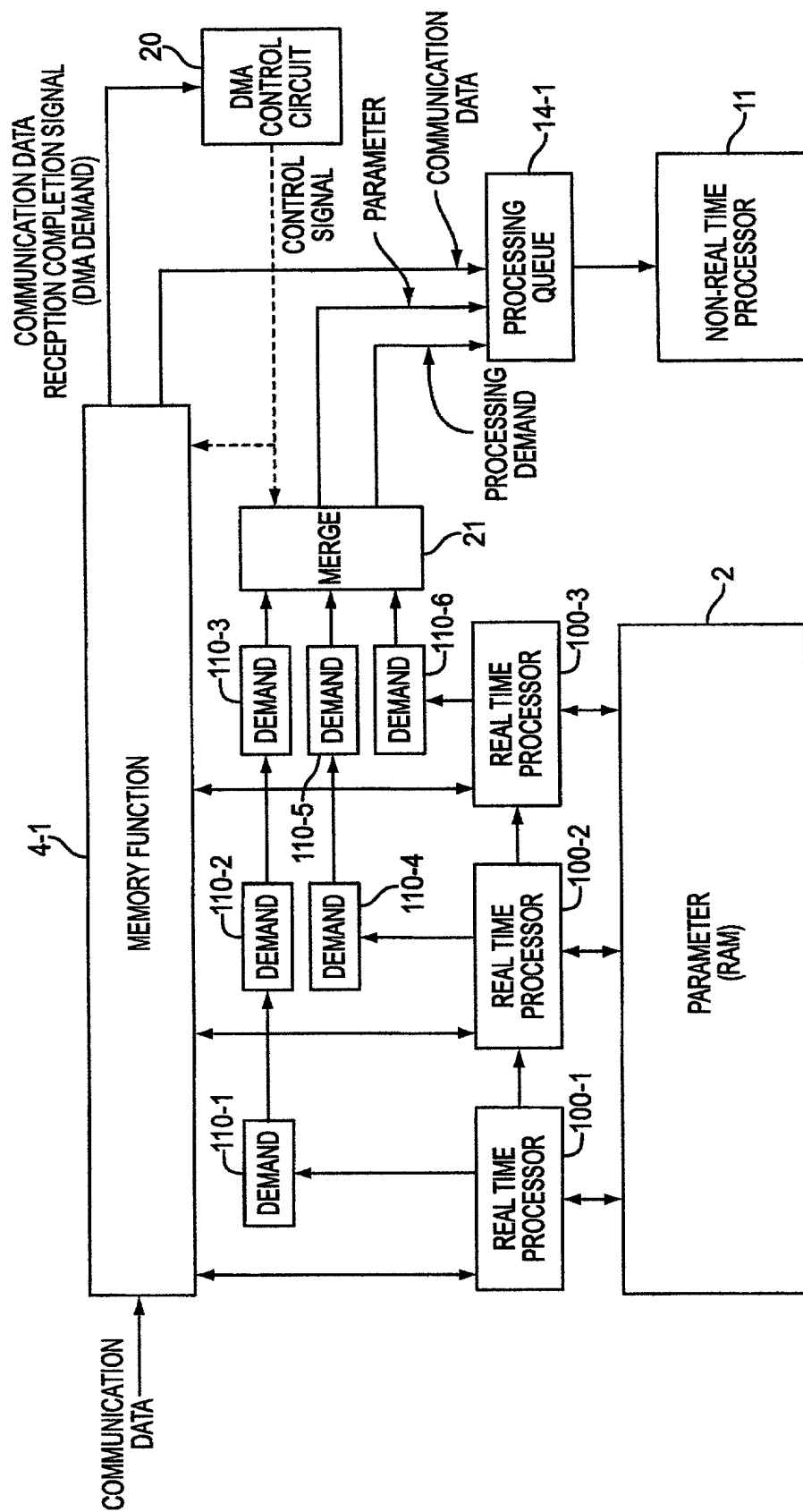


FIG. 14

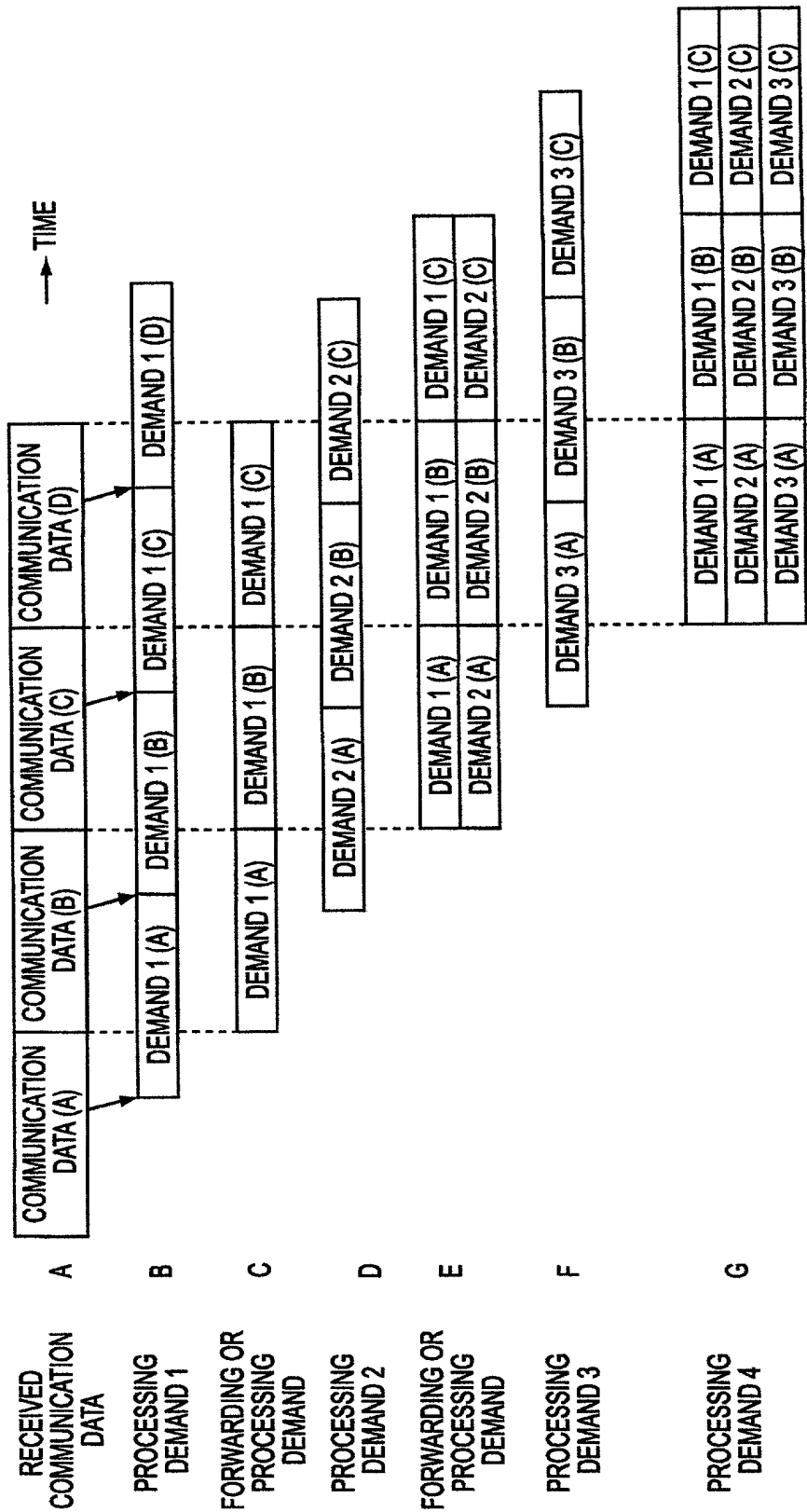


FIG. 15

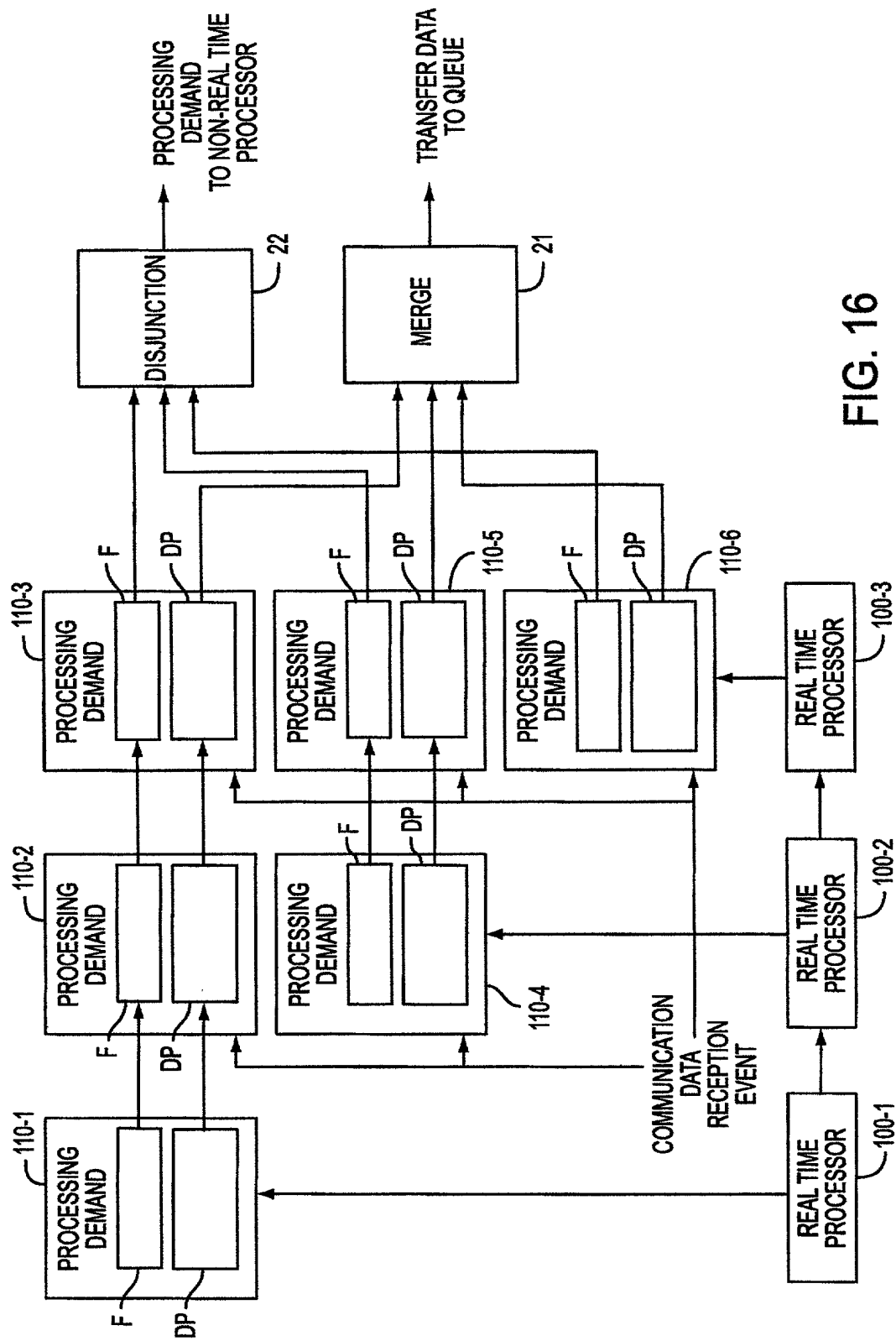


FIG. 16

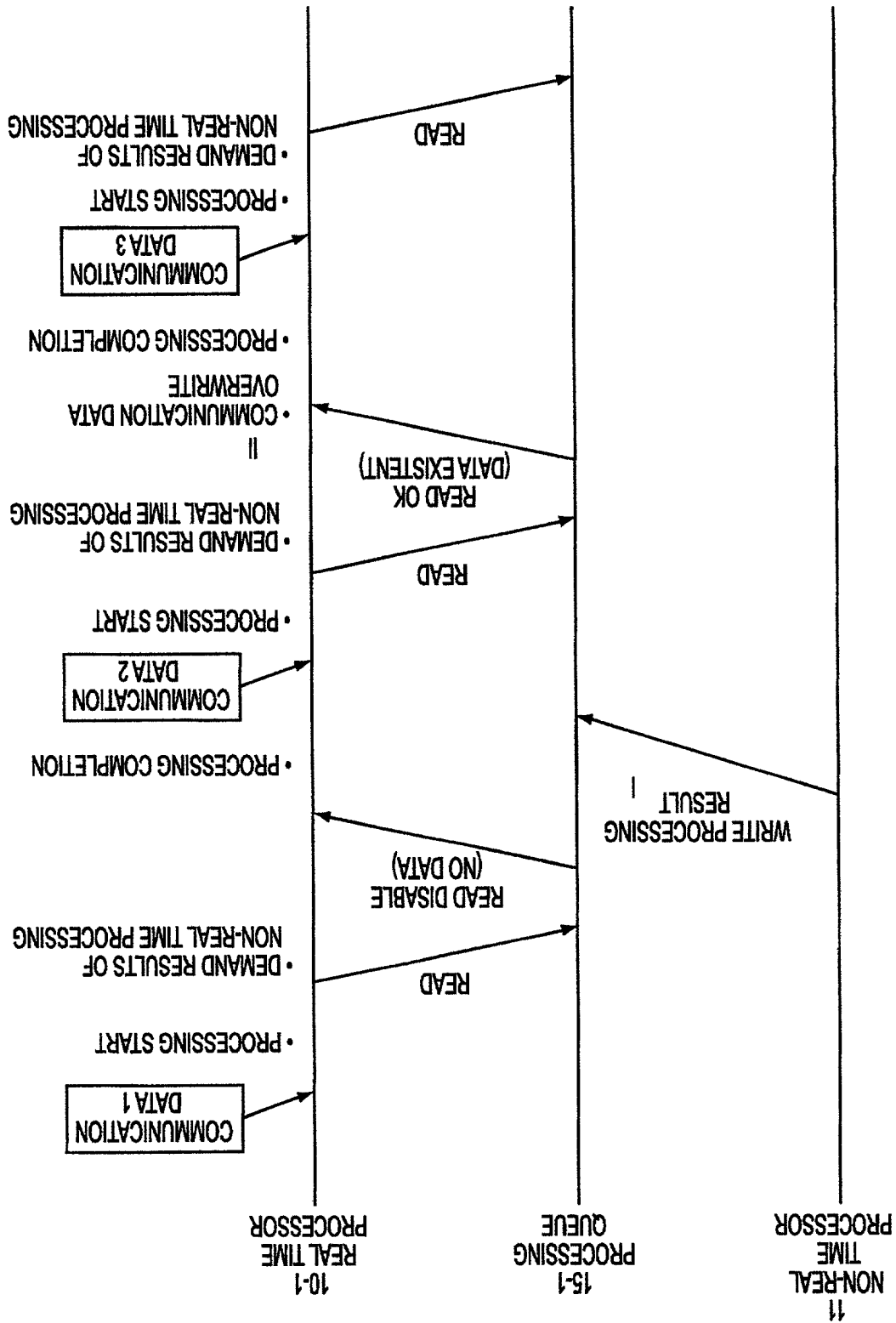


FIG. 17

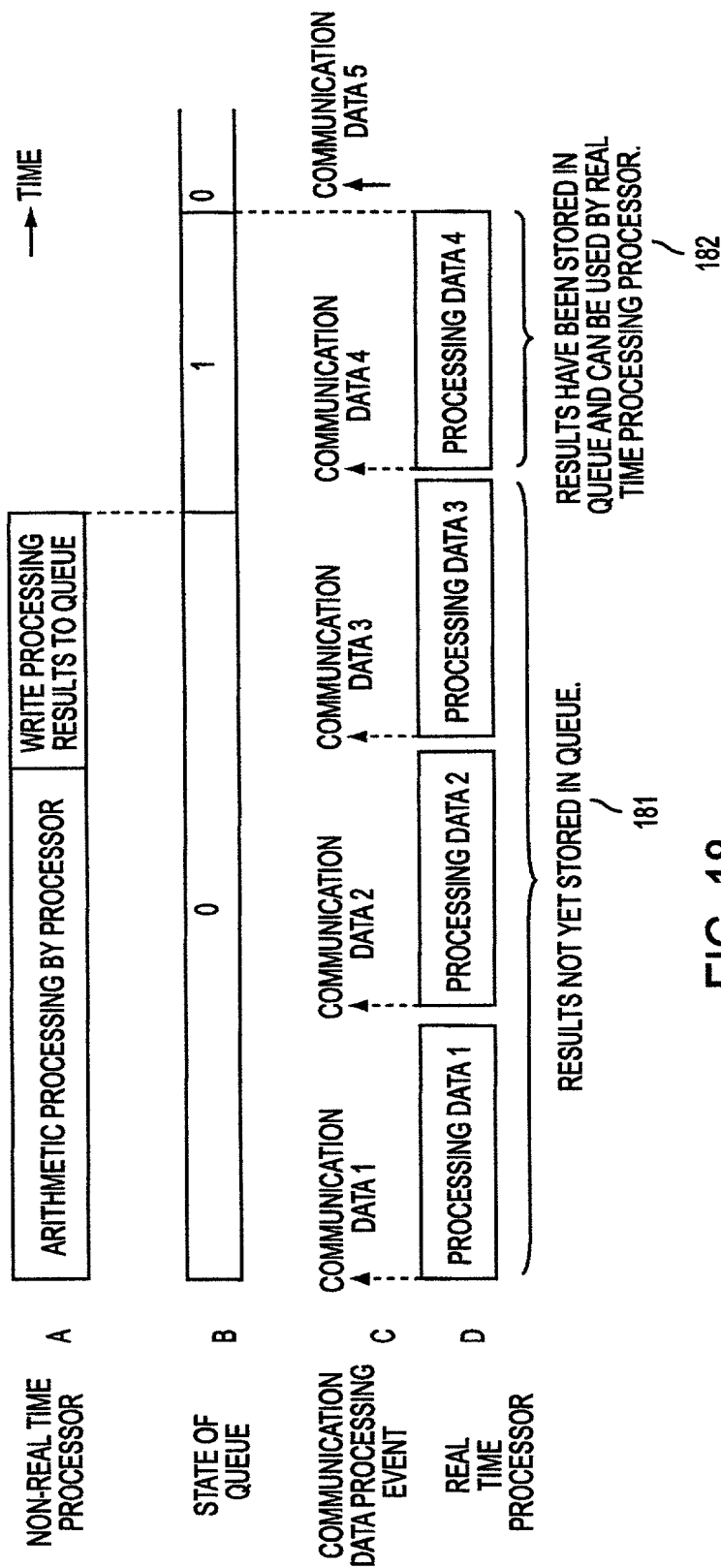


FIG. 18

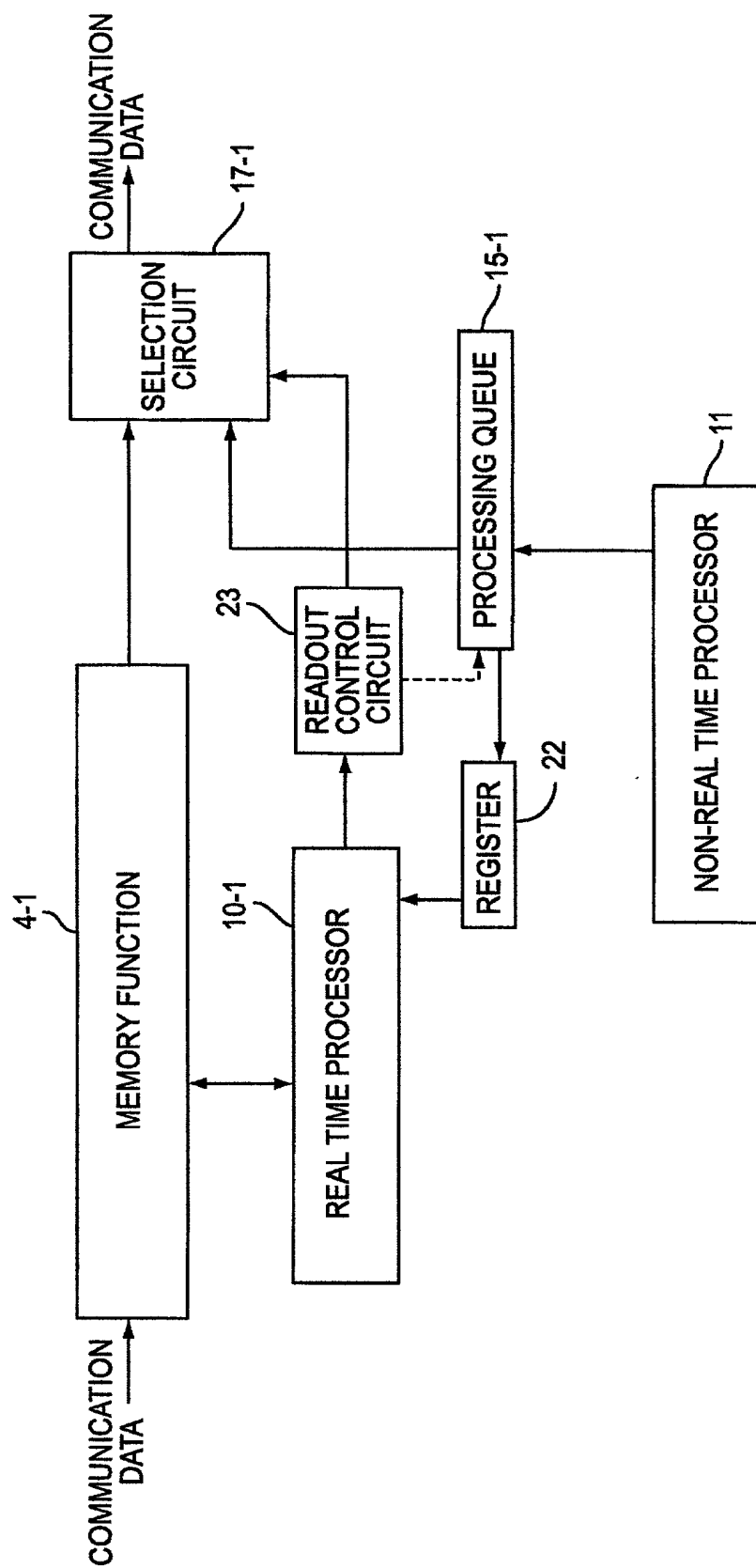


FIG. 19